

Draft

THE INSECT PEST SURVEY BULLETIN

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Texas	Mr. F. L. Thomas, Agricultural Experiment Station, College Station.
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INTRODUCTORY

With the last number of Volume 6 of the Insect Pest Survey Bulletin, we instituted a slight change in this publication by issuing a 10th number in which the year's entomological features were summarized. This was the result of many requests for an annual summary similar to the one prepared in 1922 and published in the form of a Departmental Bulletin (U. S. D. A. No. 1103).

It was felt impractical to issue a printed annual summary, as the necessary time involved in preparing, editing, and printing such a publication made it available at so late a date that much of its value was lost.

This year the Survey will issue to its collaborators a questionnaire form covering several of the most widely distributed and important insect pests, with the hope that this may result in the Survey receiving from those carrying on investigations on one or more of these pests, data of a much higher statistical value, and of a more comparable nature than could be obtained by cursory reports. The Survey does not wish its collaborators, however, to feel that the incidental notes on all insect conditions made in the course of their regular activities are not highly appreciated by the Survey and urges its reporters to continue their general reporting to as great an extent as their time will permit.

The season in general is not far enough advanced to have developed any outstanding features at the time this first number of volume 7 is issued.

GENERAL FEEDERS

GRASSHOPPEPS (Acridiidae)

Montana -
South Dakota

W. B. Mabey (February 15): Last fall, in a survey of the eastern part of Montana bordering South Dakota, especially Wibaux and Fallon Counties, considerable numbers of eggs were found of Melanoplus atlanis Riley, Camnula pellucida Scudd., and Melanoplus bivittatus Say. There is likely to be a small grasshopper outbreak in this territory.

California

T. D. Urbahns (February 17): Grasshoppers covering such species as Melanoplus differentialis Thos., Camnula pellucida Scudd., Melanoplus marginatus Scudd., Melanoplus devastator Scudd., and others, have caused less destruction of crops than in previous years on account of the large quantities of poisoned bran mash which have been used by growers throughout the State.

MORMON CRICKET (Anabrus simplex Hald.)

Montana

W. B. Mabey (February 15): Our big problem this coming season will probably be the Mormon cricket. In Lake and Sanders Counties, in the western part of the State, this insect now infests some 250,000 acres, or at least double the territory infested the previous season. During the season of 1926 it did damage amounting to over \$120,000. A survey last fall showed that an unusual number of eggs were laid and eggs collected since our recent cold weather have hatched normally, so unless something unforeseen happens, we expect quite a problem on our hands this coming spring. Through this Department and with the use of the County Insect Pest Law we expect to spend some \$15,000 on the control campaign.

WIREWORMS (Elateridae)

Montana

W. B. Mabey (February 15): Wireworms are gradually increasing and are ever becoming a more serious problem, especially with our potato growers.

CEREAL AND FORAGE-CROP INSECTS

WHEAT

HESSIAN FLY (Phytophaga destructor Say)

Pennsylvania

C. C. Hill and H. D. Smith (February 3): The wheat stubble is very lightly infested by the spring generation of the "fly." Volunteer wheat was found to be plentiful and in general heavily infested. Examination has shown that puparia in the volunteer wheat are very lightly parasitized and for this reason may prove a source of considerable infestation

during the coming season. For the most part the fall wheat was lightly or not at all infested, with the exception of that in certain localities along the Susquehanna Valley, where infestation was very heavy.

H. E. Hodgkiss (February 16): For the last five years, including 1926, the Hessian fly has not been abundant in Pennsylvania except in 1922. Since that time the Hessian fly has decreased so as to be a relatively unimportant consideration. In 1926 the spring brood was large, but the damage was not extensive. The records of our planting demonstration plots for 1926 indicated that there was little infestation in these plots at the time of sampling.

Maryland

C. C. Hill and H. D. Smith (February 3): Stubble over the entire State was found to be very lightly infested, and the fall wheat was for the most part sown late and escaped infestation. Volunteer wheat, however, was found plentiful through most of the State and was in general heavily infested. The fly puparia in the volunteer wheat proved to be lightly parasitized and may become a source of considerable infestation during the coming year.

Virginia

H. D. Smith (February 3): Wheat stubble and fall sown wheat were found very lightly infested. There is considerable volunteer wheat in the fields which was found to be moderately infested. The puparia in the volunteer wheat were only lightly parasitized.

West Virginia

W. E. Rumsey (February 18): This insect was not reported to us last year.

North
Carolina

H. D. Smith (February 3): Both wheat stubble and fall sown wheat were found very lightly infested. There was not sufficient volunteer wheat to be a factor for Hessian fly infestation.

South
Carolina

J. O. Pepper (February 21): There have been no complaints about the Hessian fly in the past two years and no specimens have been collected during this time.

Ohio

J. S. Houser (February 11): There is some prospect of damage by the Hessian fly in Ohio this coming year, particularly in the west-central part of the State where the wheat-field survey last season indicated that about a dozen counties west of Columbus were rather badly infested. A more disturbing factor, however, is the fact that over much of the wheat-producing section of Ohio harvest was delayed by wet weather to the point where the grain shattered badly. The fall months were unusually wet and this resulted in the shattered grain sprouting, and since clover is a very poor stand we have much more volunteer wheat than is normal. Much of this volunteer wheat which we have examined is heavily infested and gives promise of furnishing quite a heavy spring brood.

- Michigan R. H. Pettit (February 11): Just now the Hessian fly is present in only a scattering way in Michigan, so far as I know.
- Wisconsin S. B. Fracker (February 18): Rare, no reports in 1926.
- Illinois W. P. Flint (February 15): Moderately abundant in volunteer wheat in most areas in the State. Volunteer wheat is present in nearly all stubble fields. There will be some infestation from this source in the spring. Nearly all sown wheat was planted very late, but in most sections of the State but few fields were sown before the fall rains, and a little infestation exists in the sown wheat. The few examinations made show that the fly survived the winter.
- South Dakota H. C. Severin (February 12): The Hessian fly was very scarce in South Dakota during the past year.
- Nebraska M. H. Swenk (February 10): In a general way we know that the Hessian fly is not particularly numerous in the winter wheat fields at this time, and we do not anticipate much, if any, commercial damage to the winter wheat crop of 1927.
- Kansas J. W. McColloch (February 11): There is a rather general infestation of the Hessian fly over much of the State, and in some of the south-central counties, such as Kingman, Reno, and Pratt, there has been some loss, due to this insect. Throughout most of the State, however, the infestation is comparatively light but promises to increase this spring.
- Oklahoma C. E. Sanborn (February 11): The Hessian fly is more abundant than usual and has increased the area of infestation over any year preceding. It now extends as far south as the southern boundary of Payne County, and as far west as 8 miles west of Alva. The northwest part of the State, wherein the infestation lies, is not uniformly infested. Some infestations are heavy, others light.
- C. E. Rude (February 14): Early planted wheat in Woods, Alfalfa, Grant, Kay, Garfield, Noble, and Payne Counties is quite heavily infested. In Garfield County fully 50 per cent of the crop is infested. Greater abundance as compared with an average year. Five samples of 100 plants each from five points in fields showed infestation running from 0 to 95 per cent.
- Montana W. B. Mabey (February 15): The Hessian fly, which came into Montana a few years ago, has practically disappeared. In a survey last fall of the previously infested territory, I could find no signs of it. It has apparently receded from Montana.
- California T. D. Urbahns (February 17): The Hessian fly has been reported active in the fields since January by Mr. Cartwright of U. S. Bureau of Entomology, while light infestations are known to

occur in the upper Sacramento Valley and the Coast districts. This insect is of economic importance only in the regions immediately adjoining the lower Sacramento River and San Francisco Bay district.

TOOTHED FLEA BEETLE (Chaetocnema denticulata Ill.)

Nebraska M. H. Swenk (December 31): During the third week in October from Hamilton County there came a report of an abundance of the toothed flea beetle feeding on young wheat.

GREEN BUG (Toxoptera graminum Rond.)

West Virginia W. E. Rumsey (February 18): We received no reports of outbreaks by this insect last year.

South Carolina J. O. Pepper (February 21): On January 10, specimens of this insect were received from Oconee County and reported as destroying a two-acre field of oats. It possibly occurs in small numbers elsewhere in the State but has not been observed or reported.

Michigan R. H. Pettit (February 11): The green bug did some damage in Michigan for the first time last year. It was more troublesome in the far north than anywhere else, although here and there quite good sized areas suffered.

Alabama J. M. Robinson (February 11): The green bug was not observed last fall or this spring in Alabama.

Mississippi R. W. Harned (February 21): The green bug is seldom a pest of importance in Mississippi. So far this spring we have received no reports about it.

Louisiana W. E. Hinds (February 17): The green bug is apparently unusually abundant this spring.

Wisconsin S. B. Fracker (February 18): Serious damage in some fields in Ashland, Bayfield, Clark, Florence, Oconto, Taylor, Racine, and St. Croix Counties in 1926.

South Dakota H. C. Severin (February 12): The green bug was fairly abundant in South Dakota during the last year and did some harm. It is only occasionally that this insect is found in our State.

Nebraska M. H. Swenk (February 10): No infestation of the green bug has come to our notice during the past fall or winter.

Kansas J. W. McColloch (February 11): As far as our records go the green bug has not been reported in the State this fall or winter.

Oklahoma C. E. Sanborn (February 11): The green bug is again prevalent and has been prevalent all winter. Some known infestations occur

in Canadian and Kingfisher Counties. A few specimens have also been taken in Payne County, but no particular field infestations have been reported.

C. S. Rude (February 14): The green bug showed up in Love County much earlier than usual. In no case is it widely scattered, it being still found in small patches. Also reported from Canadian and Kingfisher Counties.

- Texas F. L. Thomas (February 17): We have recently received information with reference to the occurrence of the green bug in Wise County.
- Colorado W. B. Mabree (February 16): Nearly every year we have one or two more or less local outbreaks of the green bug in the lower Arkansas Valley. It seldom is very serious, doing its damage mostly to oats but sometimes to wheat also.
- Arizona A. A. Nichol (February 15): The green bug is present in the Salt River Valley but there are no records of injury, and grain crops are seemingly in excellent condition.
- California T. D. Urbahns (February 17): The green bug is found only upon careful search by a specialist, and is not considered of economic importance.
- E. O. Essig (February 23): Noticed last winter but not this.

CORN

CHINCH BUG (Blissus leuconterus Say)

- Pennsylvania H. E. Hodgkiss (February 16): The chinch bug ordinarily is not a pest. There was an outbreak in 1926 in three counties rather widely separated. The cause of this outbreak was not clearly ascertained. It did not gain serious proportions.
- West Virginia W. E. Rumsey (February 18): No outbreak of this insect was reported to us last year.
- South Carolina J. O. Pepper (February 21): This insect was present the past year in rather large numbers in a number of localities of the Piedmont Section of the State. It caused very serious injury to late corn, In York County, a few small areas of late corn were completely destroyed. Apparently a large number went into hibernation and so far we have not had any very severe weather this winter. No survey has been made to check up on the number surviving the winter.
- Florida E. W. Berger (February 24): This insect is known to be present in the St. Augustine grass lawns but does not appear to be active. The chinch bug, to my observation, does its worst injury in the

St. Augustine grass lawns during the fall or during the drier spells in late summer.

- Michigan R. H. Pettit (February 11): The chinch bug is present in small numbers, in the southeastern part of the State only.
- Wisconsin S. B. Fracker (February 18): Very rare, no specimens collected for several years.
- Illinois W. P. Flint (February 15): Present in numbers sufficient to cause damage in a few southwestern or southwest-central counties.
- Mississippi R. W. Harned (February 21): During the summer of 1926 the chinch bug appeared in injurious numbers at several places, but was not reported so frequently as during the two preceding summers. We have no reason to believe that this insect will be abundant during 1927.
- Louisiana W. E. Hinds (February 17): The chinch bug is not often abundant enough to cause any complaint.
- South Dakota H. C. Severin (February 12): The chinch bug has been reduced to such numbers through weather conditions that it is again negligible.
- Nebraska M. H. Swenk (February 10): The chinch bug, we know, went into the winter in abundance in a large district in southeastern Nebraska. We have planned to investigate to determine the approximate winter mortality, which we suspect may run fairly high, but as yet we have not been able to make the necessary survey.
- Kansas J. W. McColloch (February 11): The chinch bug situation is rather alarming. More bugs went into hibernation this fall in the northeastern fourth of the State than at any time in the last ten years. Climatic conditions have not caused any high mortality, and because of snows and rains it has not been possible to carry on as much burning as was formerly done. In view of these facts, it would appear that the chinch bug will be a major problem with us during the coming season.
- Oklahoma C. S. Rude (February 14): In northeastern Oklahoma chinch bugs can be found in the bunch grass but at present there is nothing to indicate that they will be more numerous than usual. Winter burning of waste land was practiced in localities where the bugs were abundant last year.
- C. E. Sanborn (February 11): The chinch bug infestation this year will probably be similar to that of last year.
- California T. D. Urbahns (February 17): While recorded from California, it apparently does not make its appearance in the field, and I do

not recall ever having an infestation in this State of the true form, Blissus leucopterus.

E. O. Essig (February 23): So scarce that it can not be found for collections.

CORN EAR WORM (Heliothis obsoleta Fab.)

Texas

T. C. Barber (February 21): Roasting ears for sale in the local city market at Brownsville are heavily attacked by the corn ear worm. The worms are of all sizes from very small to large, indicating a continuous winter development of the species.

ALFALFA

ALFALFA CATERPILLAR (Eurythene Boisd.)

California

T. D. Urbahns (February 17): This insect was not so abundant during the season of 1926 as it has been for a number of years previous, although this insect constantly caused heavy losses to alfalfa growers extending from the Imperial Valley in the southern part of the State through the San Joaquin and Sacramento Valleys to the north.

GREEN CLOVER WORM (Plathypena scabra Fab.)

Mississippi

R. W. Harned (February 5): During the latter part of January moths of the green clover worm were received from Iuka in Tishomingo County, and Sibley in Adams County, and also were observed flying here at A. & M. College.

GRASS

GREEN JUNE BEETLE (Cotinis nitida L.)

North
Carolina

W. A. Thomas (January 20): Several residents of this town have complained of something destroying their lawn grass within the past few days. An examination of some lawns has been made and these were found to be heavily infested with white grubs. In some places the grass was almost completely covered with the loose earth brought to the surface by the grubs. The newly opened burrows are very conspicuous early in the mornings and give the lawn an unsightly appearance. This is the heaviest infestation the writer has observed in this section (Chadbourn) and should it continue through spring serious damage is almost certain to occur.

F R U I T I N S E C T S

GENERAL

APHIDAE

Virginia

W. S. Hough (February 16): Aphis eggs are more abundant on apple

twigs in the orchards of northern Virginia than has been observed in this section (Winchester) for the past five years. Although the winter has been very mild, no eggs have shown the outer shell cracked at the time of this writing.

CODLING MOTH (Carpocapsa pomonella L.)

Illinois W. P. Flint (February 15): Recent examinations in southern and western Illinois by Mr. Chandler and Mr. Bigger show that a high percentage of overwintering larvae have survived. In many orchards large numbers of larvae are found on the trunks of trees, and from present indications, we can expect serious trouble with this insect again in 1927, provided the season is at all favorable.

California T. D. Urbahns (February 17): The codling moth has been unusually destructive in view of the low prices of apples and the lack of proper and thorough spraying by many apple growers. In the pear districts this species is more readily controlled, although the total losses to pear growers would run into many thousands of dollars.

SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Connecticut W. E. Britton (March 1): The San Jose scale is not an important pest in commercial orchards where dormant sprays are given once in three or four years. We find it occasionally on neglected trees but even there it does not seem to be injuring them seriously.

Rhode A. E. Stene (March 2): We have not observed any alarmingly large infestations of this insect. We come across it occasionally, but there is no indication that it is any more numerous than it has been for the last few years.

New York P. J. Parrott (February 14): This species plays a very insignificant role at present. During the fall of 1926 there were mailed to us at different times specimens of apples which showed infestation, and we observed the scale also during the summer of that year on three-year-old plantings of apples, some of the trees of which were badly infested. Generally speaking, the pest is of no importance in commercial orchards. It is rarely mentioned at meetings of fruit growers and we are seldom called upon to give recommendations relative to control measures. Commercial growers are no longer apprehensive relative to its activities, and if spotting of fruit, especially apples, is noticed, they know how to handle it effectively without calling on State agencies for assistance.

Pennsylvania T. L. Guyton (February 16): The San Jose scale seems to be less abundant than last year. This is just a general impression gathered by the men as they go about, both in the nursery inspection and in the handling of fruit, particularly apples. We have made no official count.

H. E. Hodgkiss (February 16): The San Jose scale is not a State-wide program in Pennsylvania. There are only a few isolated orchards where the scale has increased to any extent. There are some indications of increased development where spraying has been poor, otherwise the scale is an unimportant consideration.

Delaware

H. L. Dozier (February 14): The San Jose scale has not been a factor in Delaware orchards for a number of years. At one time in the nineties it was considered our worst and most menacing problem, but now, either because of the more or less systematic spraying of the orchards or else through the agencies of natural parasites, this scale is no longer a serious thing with us. In fact only occasionally does it show up abundantly enough to require remedial measures.

Maryland

P. D. Sanders (February 25): The San Jose scale is on the increase in Maryland. This noticeable increase can be traced to two general tendencies in the State for the past few years.

1. The commercial fruit growers are making an effort to reduce the cost of production by spraying for the scale every other year. As a result considerable fruit injury was noticeable last fall in the commercial orchards.

2. Poor spraying by the small orchardists has allowed the scale to increase. This is especially true in western Maryland where the small orchard is most abundant.

West
Virginia

W. E. Rumsey (February 18): The San Jose scale occurs throughout the State but is kept down by the regular spray program of the orchardists. It still does its damage on fruit trees in village lots and home orchards that are not properly cared for.

South
Carolina

J. O. Pepper (February 21): In the Sand Hill or northeastern section of the State an unusual infestation of scale occurred on peach trees this winter. In many orchards parts of trees have been killed. From all observations it appears that lubricating oil emulsions as well as lime sulphur ~~have~~ failed to control. Much effort is being put forth to kill the scale out in this section with this year's dormant spraying.

Georgia

Monthly Letter of the Bureau of Entomology, No. 152 (December, 1926): Observations in the past few months have shown a very heavy mortality of the San Jose scale in the Georgia peach belt; heavier than at any other time in the last five years. It is believed to be due to twice-stabbed ladybird beetles. In many cases the scale coverings with no bodies under them were found clinging to the trees. The question has arisen whether the unusual abundance of ladybird beetles in 1926 is in any way correlated with the general use of lubricating-oil emulsions for the last several years.

Florida

E. W. Berger (February 24): The San Jose scale is present but I am not aware that there has been anything unusual in its development.

- Ohio J. S. Houser (February 11): The San Jose scale, from reports received this winter and on the basis of some observations made, is perhaps only slightly more abundant than last year. On the whole, I think it can be stated that the standard controls recommended are effectively holding the insect in check where the spraying is properly done. Moreover, natural controls are operating quite effectively in many sections of the State and the scale does not seem to be making great progress even where no dormant spraying is done.
- Illinois W. P. Flint (February 16): The winter survival is apparently about normal. Examinations made during the last month of unsprayed material show from 30 to 45 per cent of the scale alive. These examinations would apply in general to conditions in southern Illinois. Very few badly infested orchards can be found in our larger orchard districts, owing mainly to the general use of emulsions for scale control.
- Michigan R. H. Pettit (February 11): The San Jose scale is not making itself an outstanding pest at all. As a matter of fact, we hear a very little about it these days, perhaps because delayed dormant spraying is being pretty universally done.
- Wisconsin S. B. Fracker (February 18): Not now known northwest of Madison. Injurious in Ozaukee and Kenosha Counties. Has been brought under satisfactory control for the present by spraying in Racine, Walworth, and Dane Counties.
- South Dakota H. C. Severin (February 12): The San Jose scale made ~~its~~ appearance in South Dakota on several different occasions during the past fifteen years, but each introduction was destroyed through burning of infested stock.
- Nebraska M. H. Swenk (February 10): No infestations of the San Jose scale have come to our notice during the past fall or winter.
- Oklahoma C. S. Rude (February 14): The San Jose scale is widely scattered over the State and as yet the farm people are not taking hold of clean-up measures readily.
- C. E. Sanborn (February 11): The San Jose scale is more generally prevalent than common and did more damage last year than during many preceding years.
- Alabama J. M. Robinson (February 11): The San Jose scale was present in about the usual abundance over the State.
- Mississippi R. W. Harned (February 21): The San Jose scale is now fairly abundant in every county of Mississippi. It would probably be difficult to find an orchard of deciduous fruit trees that is not more or less infested. The fruit trees growing in practically every town and village in the State are also more or less infested. The commercial orchards and many of the home orchards are sprayed regularly each

winter with a dormant spray, and under such conditions the scale is of little importance. Although the San Jose scale is probably our most important fruit-tree pest, we find that most of the trees are able to survive many years even though infested with this insect. Of course, young small trees that become infested frequently succumb, but after the trees have survived to an age of three or four years, they are usually able to survive for a much longer period. These trees, of course, are probably not so vigorous and profitable as trees that are sprayed and kept practically free of scale insects, but I have on numerous occasions observed trees to remain infested with the scale for many years and continue to bear quite profitable crops from year to year. It would seem that in many cases this is due to partial natural control of the insects combined with the resistance of the trees. Our nurseries are kept free of the scale and no trees are allowed to be sold under any conditions that show scale markings. As a precautionary measure all deciduous trees are fumigated with hydrocyanic-acid gas, but any that show scale markings must be discarded.

- Louisiana W. E. Hinds (February 17): The San Jose scale is undoubtedly serious wherever it occurs, and we have no doubt that it had continuous breeding through the winter season.
- Colorado C. P. Gillette (February 16): We have had no inquiries concerning the San Jose scale during the past year. We know, however, that the scale does occur in some of the orchards in the vicinity of Grand Junction, and probably there is some extremely slight infestation in one locality in Delta County, but for the past two years we have been unable to find any specimens of it at all. In the Grand Junction area we try to treat promptly every orchard where an infestation occurs, but have never been quite able to stamp the insect out. It does very slight damage to the fruit crop in this State.
- Idaho C. Wakeland (February 15): Severe infestations of the San Jose scale on fruit trees occurred only on trees in areas where there had been a small percentage of the insects that survived the winter of 1924-25. These areas were known and spraying was carried on generally in restricted communities in the spring of 1926. As reported in 1926, very little dormant spraying was done in the spring of 1925, and it was not needed, for the winter preceding had killed the insects completely in the fruiting areas of and on all portions of the trees above snow line. Killing was so complete that in large areas there has not been sufficient increase of scale insects to justify the application of dormant sprays again in 1926. There are a few localities even where it appears that spraying will not be conducted this season, so complete was the destruction of scale insects in December, 1924. During the past season a noticeable increase has taken place in all areas where there was a slight hold-over of live insects in 1924-25. In many localities there was little or no injury to fruit during 1926, but the insects are scattered in the fruiting areas of many trees now where they are not suspected by the grower, and

doubtless heavy injury will occur in many localities this season unless control work is practiced. The winters of 1925-26 and 1926-27 have been favorable for the survival of a large percentage of scale insects. The temperature did not reach zero at this station in 1925-26 and 5° has been the minimum for the present winter.

- Arizona A. A. Nichol (February 15): Found scatteringly over the State, but particularly injurious in the Salt River Valley where additional records of the death of pear and peach trees have been made. A very serious infestation was found on *Cotoneaster* and *Pyracantha* spp. in an ornamental planting. The pest in this case was evidently introduced into Arizona.
- Oregon D. C. Mote (February 23): Two years ago we made a survey in this district near Corvallis and were unable to find a sufficient quantity of the San Jose scale for experimental tests. This year we have received only one request for information concerning control, in which the writer reported a light infestation in his pear orchard.
- California T. D. Urbahns (February 17): The San Jose scale occurs throughout the State in pear, apple, and peach orchards, but is held in check by the usual lime-sulphur spray applications, and is at present of economic importance only in scattered orchards, some in Yuba County, others in Kings County. If our spraying with lime-sulphur solutions were discontinued, this scale would undoubtedly be of very outstanding importance in the course of two or three years.
- E. O. Essig (February 23): Noticed in a few districts this winter. Not a serious pest as yet.

RED SPIDER (Tetranychus telarius L.)

- California T. D. Urbahns (February 17): Orchard mites are probably among the outstanding pests of economic importance in California. The common red spider heads the list in its destruction to the deciduous fruit trees, especially the French prunes, peaches, almonds, figs, and grapes, and, in addition to this, it frequently destroys fields of beans, cucumbers, and cotton.

PEAR

AN ANOMALA (Anomala sp.)

- Mississippi R. W. Harned (February 17): Inspector F. P. Amsler has found beetles attacking the terminal buds of pear trees at Perinston. They are reported as working at night. The owner stated that

he was first bothered by these beetles in 1925. They were not noticed during 1926. This year they have appeared in larger numbers than two years ago. These beetles have been tentatively identified by Mr. J. M. Langston as Anomala undulata.?

PEAR LEAF BLISTER MITE (Eriophyes pyri Pgst.)

California T. D. Urbahns (February 17): The pear leaf blister mite has been very destructive, causing a loss to pear growers which would probably total somewhere near \$100,000 for the different districts of the State.

PEACH

PEACH TWIG BORER (Anarsia lineatella Zell.)

California T. D. Urbahns (February 17): The peach twig borer is probably the insect of greatest economic importance in California in view of the immense production of canning and shipping peaches. There are two and three generations in different parts of the State, and the destructiveness of this insect is extended throughout the entire interior valley district as well as southern California.

PLUM

CLOVER MITE (Bryobia praetiosa Koch)

California T. D. Urbahns (February 17): The clover mite, known locally as the almond mite, is especially destructive on almonds and prunes throughout the Coast districts and interior valleys of northern and central California.

APRICOT SCALE (Lecanium corni Bouche)

California T. D. Urbahns (February 17): The brown apricot scale continues to develop in abundance on prune trees in most of the prune-growing districts and on apricots wherever they are grown throughout the State. Peach, pear, and plum trees also frequently become infested to the extent of requiring special control measures.

PECAN

FLAT-HEADED APPLE TREE BORER (Chrysobothris femorata Fab.)

Mississippi R. W. Harned (February 5): A correspondent at Jackson wrote on January 29 as follows: "Last year we set out 1,000 pecan trees of which 146 died. On removing these for replacement it was found that although the tops were dead, the roots of the majority of them appeared to be alive and this kind of worm was

found in the trunk at the ground surface." The specimens that accompanied this letter were identified by Mr. J. N. Langston as Chrysobothris femorata Fab.

SOUTHERN GREEN STINK BUG (Nezara viridula L.)

California T. D. Urbahns (February 19): Quite a number of complaints regarding kernel-spot of pecan accompanied by nuts showing this trouble have been received from all sections of the State during the past two weeks. The southern green plant bug or stink bug is usually blamed for this injury. The nuts were punctured by insects during the past summer. We believe that kernel-spot of pecan was more widespread and more serious during 1926 than during any previous year. Of course, other insects may have caused part of this injury. We have no definite data to indicate what species of insects were concerned in causing this injury, but assign it to Nezara viridula as that species usually gets the blame.

CITRUS AND SUBTROPICAL FRUITS

MEALYBUGS (Pseudococcus spp.)

California T. D. Urbahns (February 17): Mealybugs of several species, including Pseudococcus citri Risso, Pseudococcus maritimus Ehrh., Pseudococcus gahani Green, and others continue as serious pests of citrus trees, while they are also causing considerable loss to grape and pear growers. In addition to this, they are considered of economic importance to ornamental nursery stock.

SCALE INSECTS (Coccidae)

California T. D. Urbahns (February 17): Citrus scale insects, including the gray scale, Ooccus citricola Champ., the black scale, Saissetia oleae Bern., the red scale, Chrysomphalus aurantii Mask., and others continue to be very destructive throughout many of the orange and lemon districts. In some districts control is reasonably successful by the use of oil sprays, while in others double treatment by both spraying and fumigation is necessary.

SPIRAEA APHID (Aphis spiraeicola Patch)

Florida J. R. Watson (February 15): Citrus aphids, which were getting very numerous in December, received a severe setback in January through the killing of all tender foliage by the severe freezes of that month. Most of them starved to death through lack of food. However, they are rapidly increasing and give promise of doing damage to the tangerine crop, and perhaps to the blossoms of orange.

EUROPEAN RED SPIDER (Paratetranychus pilosus Can. & Fanz.)

California

T. D. Urbahns (February 17): The European red mite, known in California as the citrus red spider, is generally distributed throughout California, but most severely attacks the fruit trees through some of the southern counties and in the San Joaquin Valley. It is frequently found present in rather abundant numbers.

FIG SCALE (Lepidosaphes ficus Sign.)

California

T. D. Urbahns (February 17): The fig scale is gradually increasing in abundance throughout the central San Joaquin Valley and becoming quite a serious pest of the Kadata or canning figs, as well as the drying figs.

TRUCK - CROP INSECTS

MISCELLANEOUS FEEDERS

MONARCH (An sia plexippus L.)

Mississippi

K. L. Cockerham (October 31): On this date I observed a very unusual flight of these butterflies. There were literally thousands of them in flight, and all going in a westerly direction. The flight continued for a good portion of the day, and is the first great flight of this species that I have observed at this locality (Biloxi).

FOUR-SPOTTED CABBAGE FLEA BEETLE (Phyllotreta bipustulata Fab.)

Mississippi

R. W. Harned (February 10): At McComb, in Pike County, this insect was attacking tomato, eggplant, beet, pepper, and turnip plants.

CUTWORMS (Noctuidae)

Alabama

J. M. Robinson (February 11): Cutworms have been active throughout December and January, attacking vegetables particularly.

SEED CORN MAGGOT (Hylemyia cilicrura Rond.)

Mississippi

R. W. Harned (February 5): Three rather serious complaints in regard to the seed corn maggot have been received recently. One farmer, at Bassfield, wrote as follows, on January 25: "They were killing all my English peas, turnips, radishes, and in fact all plants that have come up so far." The county agent at Furvis sent specimens to us on January 29, and stated that they were ruining English peas. Inspector W. D. Peets sent specimens from Crystal Springs on February 1, with the information that they had destroyed $1\frac{1}{2}$ acres of cabbage.

TURNIPS

TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata Fab.)

Mississippi

R. W. Harned (February 5): Inspector R. P. Colmer, at Moss Point, reported as follows on January 19. "In December I was called to Lucedale in George County to investigate insects that were damaging turnips. Besides the turnip louse I found D. duodecimpunctata eating some of the turnips. The worst thing about these beetles was that they were clinging to the leaves as the plants were being gathered for canning. The owner feared that some of them would be canned with the leaves

and that he might be liable for a damage suit. I recommended that he dust with nicotine sulphate ahead of the pickers. This gave excellent results and the beetles caused no more trouble. The nicotine has also kept the lice down."

R. W. Harned (January 19): This plant louse, Rhopalosiphum pseudobrassicae Davis, has been especially abundant during the fall and winter. Complaints have been received from many parts of Mississippi. At many places it seems to have completely destroyed the winter turnip crop.

Louisiana

W. E. Hinds (February 17): The turnip aphid at Baton Rouge is apparently unusually abundant this spring.

TURNIP WEEVIL (Listroderes obliquus Gyll.)

Mississippi

R. W. Harned (January 19): A letter from Dr. L. O. Howard, dated January 12, 1927, is as follows: "The larvae on forget-me-nots collected at Brookhaven, Miss., and sent in by you on January 6th, have been examined by Dr. Ewing who tells me that they are partly grown larvae of Listroderes obliquus." Specimens of this insect feeding on turnips were also received from Gloster, on January 13. A complaint in regard to damage caused to turnips was also received from Brookhaven, on January 13. (February 5): Quite a few complaints have been received recently in regard to damage done to truck crops by the turnip weevil. Serious damage to lettuce and turnips at Hattiesburg was reported on January 24. One grower at Ellisville stated, on January 26, that these insects had destroyed one-half acre of turnips on his property. Another grower, at Barto, in Pike County, stated that they were eating his turnips, lettuce, and cabbage. One complaint in regard to damage done by this insect to onions was received on February 1, from Laurel. On February 9, a correspondent at McComb, Pike County, sent tomato plants that had been eaten by insects. These were accompanied by a number of small larvae that J. M. Langston tentatively determined as Listroderes obliquus. The correspondent also reported that these insects were eating eggplant, pepper, beet, and turnip plants. On February 9, Inspector J. E. McEvilly reported a 100 per cent infestation of this insect in a turnip patch belonging to a grower at Waynesboro, Wayne County.

R. W. Harned (February 25): Listroderes obliquus continues to be by far the most important pest of gardens in the southern part of the State. Serious complaints in regard to the injury caused by this species have recently been received from Jackson, Jones, Perry, and Wayne Counties. These reports indicate that the turnip crop is one of those most seriously injured. This really is serious because one of our most important green vegetables at this time of the year is turnip greens.

Louisiana

W. E. Hinds (February 17): The Australian tomato weevil larvae were very abundant and seriously injuring crops of carrots, shallots, etc., around Destrehan and St. Rose during the last week of January. Control by dusting with calcium arsenate was satisfactory on carrots and exposed leaf areas while applications of sodium silicofluoride with 10 per cent hydrated lime appeared to kill not only the larvae that were on the exposed surface of shallot leaves but even those which had burrowed in and were entirely concealed within the leaf.

WAVY STRIPED FLEA BEETLE (Phyllotreta sinuata Steph.)

Florida

M. D. Leonard (October 7): About an acre of young plants of turnips at Arcadia were being badly damaged, the leaves being riddled with holes.

STRAWBERRY

STRAWBERRY ROOT WEEVIL (Brachyrhinus ovatus L.)

Oregon

D. C. Mote (February 23): On February 9 we found overwintering adults of Brachyrhinus ovatus. We examined about 6 plants in a 4-acre field and found from three to five live weevils to a plant. We also found the immature larvae in the soil near the fibrous roots. Every plant we examined also contained the larval stage of the crown moth, Agrotia rutilans Hy. Ed.

A PLANT BUG (Pamera sp.)

Florida

J. R. Watson (February 15): Unusually dry weather during January and the first half of February caused considerable trouble on strawberries by this species. It is unusually troublesome to strawberries in late spring (April and May), but seldom gets abundant at this time of the year.

RED SPIDER (Tetranychus sp.)

Florida

J. R. Watson (February 15): Unusually dry weather during January and the first half of February caused considerable trouble on strawberries from red spiders. These spiders are unusually troublesome to strawberries in late spring (April and May), but seldom get abundant at this time of the year.

Louisiana

W. E. Hinds (February 17): Red spiders are exceptionally abundant, as winter host plants have not been killed. Damage to strawberries from red spider attack is greater than usual.

PYRALID

Mississippi

R. W. Harned (February 25): On January 17, Mr. F. K. Harrison collected some larvae on strawberry plants at Picayune. These were sent to Dr. L. O. Howard. A letter from him dated February 1, states that they were determined by Mr. August Busck as pyralids, not the strawberry leaf-roller, Ancylis comptana Froel.

BEANS

BANDED CUCUMBER BEETLE (Diabrotica balteata Lec.)

Florida

M. D. Leonard (October 19): Moderately abundant in several patches of beans and on volunteer corn plants at Hastings, but doing no appreciable injury. Mr. Fletcher, who determined the specimens, states that he is unable to find a previous record of the occurrence of this species in Florida.

PEAS

PEA APHID (Illinoia pisi Kalt.)

Alabama

J. M. Robinson (February 11): The pea aphid is showing up in vetch fields, giving the field the appearance of brown spots. The parasites, however, and predacious insects are trying to catch up with the aphid infestation.

Oklahoma

C. E. Sanborn (February 11): The pea aphid is present in Woodward County and doubtless prevalent in other counties although not reported.

MELONS

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica soror Lec.)

California

T. D. Urbahns (February 17): This insect has apparently been increasing in numbers. It develops mostly in the grain fields and alfalfa fields, and the adults later migrate to truck crops, including such as melons and celery. The adults also attack the ripe fruit of apricots and peaches as well as the foliage and blossoms of various fruit trees.

ONIONS

ONION THRIPS (Thrips tabaci L.)

Louisiana

W. E. Hinds (February 17): The onion thrips are particularly abundant and serious in their attack on winter growing crops of onions, shallots, carrots, etc.

CELERY

MOLE CRICKET

Florida M. D. Leonard (October 7): Several plantings set in a field at Sneed's Island, Manatee County, are moderately infested. The land being prepared for the reception of celery plants is liberally infested by the burrows.

BEETS

SUGARBEET LEAFHOPPER (Eutettix tenellus Baker)

Montana W. B. Mabey (February 15): Last fall a survey was made to determine the presence or absence of the sugarbeet leafhopper. This insect was found in Sanders, Lake, Missoula, and Ravalli Counties, although not in very great numbers. We also secured one specimen in Jefferson County, and two in Park County. None were found in our present sugarbeet growing areas and at present we feel that it is rather doubtful that any of our territory will furnish permanent breeding grounds for this insect.

GREEN PEACH APHID (Myzus persicae Sulz.)

Utah Geo. F. Knowlton (January 18): This aphid is damaging beets used for experimental purposes in the greenhouse at Logan.

POTATO

COLORADO POTATO BEETLE (Leptinotarsa decemlineata Say)

Mississippi R. W. Harned (February 25): Adults of the Colorado potato beetle were collected on Irish potatoes at Picayune, on February 21, by P. K. Harrison.

CABBAGE & COLLARD

HARLEQUIN BUG (MURGANTIA HISTRIANICA H. L. F.)

Mississippi R. W. Harned (February 25): Reports in regard to the Harlequin cabbage bug have been received from different parts of the State. The only specimens actually sent in, however, came from collard plants at Vancleave, Jackson County, on February 14, and from Cumberland, Webster County, on February 8.

S O U T H E R N F I E L D - C R O P I N S E C T S

COTTON

BOLL WEEVIL (Anthonomus grandis Boh.)

- South Carolina J. O. Pepper (February 21): Very few weevils were present in the Piedmont Section of the State during the entire season last year. In the Coastal Section very few were present early in the season but a fair infestation could be found late in the summer. Taking the State as a whole the weevil was not a serious problem last year. No survey has been made to determine the number of weevils surviving the winter.
- Florida E. F. Grossman through E. W. Berger (February 23): Activity of the army leaf worm in stripping a large per cent of the cotton fields, followed by a rather early frost which killed all new growth of cotton fruit, tended to cut down the number of weevils fitted for successful hibernation. Weevils placed in hibernation cages were active to date (excepting a period of one week following the coldest wave of the winter), indicating that the winter was not severe enough to considerably thin out those weevils which entered hibernation. Continued mild weather should bring a maximum number of weevils out of hibernation. The infestation for the coming season, however, is expected to be rather light.
- Oklahoma C. E. Sanborn (February 11): The boll weevil will probably be more serious since it dispersed extensively last fall, going as far north as the Kansas line and probably entering Kansas. It is doubtful, however, if it went any farther westward than some of the original boundary lines of previous years. We have had indications that the hibernating worms will overwinter nicely.
- C. S. Rude (February 14): Very large numbers of the weevil went into winter quarters. The weather and field conditions have been favorable for a large percentage to live over winter.
- Alabama J. M. Robinson (February 11): The boll weevil for September, October, and November, 1926, was considerably above normal for the rainfall which (according to Dr. Shelford) is an indication of an unusually large number of insects the following season. If that is the principal factor we should have a lot of insects this year. With the rainfall above normal for the three-month period last year the cotton plants as well as other vegetation grew very profusely and there were tremendous numbers of weevils in the central and southern parts of the State to go into hibernation. We were able to get weevils in greater numbers in Auburn than we have been in the last four years. Our lowest temperature was 11° above zero at Auburn the middle of January. We have not been able to find any weevils at the present time.
- Mississippi R. W. Harned (February 25): Clay Lyle makes the following summary of the boll weevil situation: "The boll weevil infestation

in Mississippi this spring will probably be rather spotted, due to field conditions last fall. A generally heavy infestation was present over the State in early September, at which time practically all the fields were defoliated by leaf worms. Following this general defoliation, much of the older cotton, and especially that on poor land, died or failed to make any new growth, resulting in a greatly reduced weevil population. However, in some cases the younger cotton on bottom lands, stimulated by the fall rains, sprouted out again and furnished abundant food for the weevil until frost. As the past winter has been very mild, a survival above normal is probable in these latter areas."

Louisiana

W. E. Hinds (February 17): No boll weevils have yet emerged from our hibernation cages and I have not had an opportunity to examine moss for weevil population.

Texas

F. L. Thomas (February 17): The boll weevil is active in the Lower Rio Grande Valley on volunteer cotton.

THURBERIA WEEVIL (Anthonomus grandis thurberiae Pierce)

Arizona

A. A. Nichol (February 15): Has been found over a greatly increased area in the southeastern part of the State. The original infestation records in Pima County have been extended up the Santa Cruz Valley into Santa Cruz County. In the Sulphur Springs Valley or Cochise County a generally distributed infestation was found.

COTTON FLEA HOPPER (Psallus seriatus Rut.)

Texas

F. L. Thomas (February 17): Cotton flea hoppers began to emerge at College Station February 16.

PINK BOLL WORM (Pectinophora gossypiella Saund.)

Arizona

California Monthly News Letter, Vol. 9, No. 1 (January 15, 1927): A second infestation of the pink boll worm of cotton has been found in the vicinity of Safford, Graham County, according to an announcement just made by the California Department of Agriculture. There are about 6,000 acres of the present infestation, the Department states, and this is the second infestation found in Arizona within the last month. The infestation is of particular significance to California cotton because the pest is adapted to semiarid conditions, and if it should become established here will cause considerable damage. The California Quarantines relating to this pest have been changed to apply to the State of Arizona.

SUGARCANE BORER (Diatraea saccharalis Fab.)

Louisiana

W. E. Hinds (February 17): Sugarcane borer hibernation appears to be in much larger numbers than in 1925-26. Recent examinations have shown that oviposition began during the first week of February and is now increasing steadily with a prospect that the first

moths will be coming out before the end of this month. This is at least six weeks earlier than in 1926 and forecasts a serious attack from this pest in the early season with the prospect of six generations during the year instead of five as occurred in 1926.

INSECTS ATTACKING MAN AND DOMESTIC ANIMALS

MAN

MOSQUITOES (Culicidae)

Montana

W. B. Mabey (February 15): Another serious insect problem in this State is the mosquito in the northern section, principally in Blaine, Phillips, and Valley Counties. Mosquitoes of several species, including Aedes vexans Meig., Aedes nigromaculis Ludl., Aedes curriei Coq., and many others are so abundant that labor will not work in the hay fields and it is practically impossible to use work horses or to keep dairy cattle in this area. It is really a very serious economic problem. We expect to devote a considerable amount of time to this situation next year.

MULES

A BUFFALO GNAT (Simulium pecuarum Riley)

Mississippi

R. W. Harned (February 25): Buffalo gnats have appeared in large numbers in Yazoo County during the past few days. Newspaper reports state that 40 mules were killed by those gnats on the night of February 22.

INSECTS INFESTING HOUSES AND PREMISES

PENTHOLISPA SP.

Nebraska

M. H. Swenk (February 1): During the first week in January a complaint was received from Hamilton County, accompanied by specimens, indicating that a cylindrical bark beetle of the genus Pentholispa was infesting the flooring of a residence in Aurora, and doing marked injury.

STORED GRAIN INSECTS

Illinois

W. P. Flint (February 15): More than the usual number of reports

of damage by this class of insects have come in during the present winter, due probably to a large extent to the condition in which the grain was put into storage.

Nebraska

M. H. Svenk (December 31): Complaints of injury by stored-grain pests continued to come in during the last half of October, and up to the end of November, in more than usual numbers.

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella Oliv.)

Monthly Letter Bureau of Entomology No. 152, December, 1926: Perez Simmons reports that recently he and G. W. Ellington discovered that the Angoumois grain moth larvae sometimes leave the grain and spin cocoons in the ground. This is a new fact that appears never before to have been recorded.

A SMALL MOTH (Blabophanes crocicapitella Clemens)

Maryland

Perez Simmons (January 23): Small, very active moths flying in a house were found to come from an infestation of case bearers feeding on dry onion skins in the bottom of a box of onions, at Takoma Park. This clothes-moth-like species has been recorded from birds' nests and dried white potato (August Busck) and from absinth seeds and refuse (W.T.M. Forbes: Lepidoptera of New York). Forbes gives the distribution as "New York to California, probably general: also in Europe and Hawaii."

ARGENTINE ANT (Iridomyrmex humilis Mayr)

Mississippi

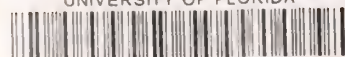
R. W. Harned (February 25): Argentine ant infestations have recently been found at two new localities, Bond and Greenwood Springs. All ant determinations are made by H. R. Smith.

FIRE ANT (Solenopsis geminata Fab.)

Mississippi

R. W. Harned (February 25): We are receiving many complaints in regard to the fire ant, Solenopsis geminata Fab. These ants build their nests in gardens and cause trouble by their habit of taking the small seeds of recently planted vegetables, by their attendance on plant lice, and especially by their pugnacity. In infested gardens when vegetables or berries are gathered, these ants come from their nests in the soil at the base of the plants and get on the hands of the owners where they sting viciously. In a recent letter from Fayette it is stated that an ant (probably this species) enters the piped eggs of geese and kills the young before they emerge from the eggs.

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